EXHIBIT – I
SCOPE OF WORK

1. DESCRIPTION OF WORK – GENERAL

Except as otherwise expressly provided elsewhere in this Contract, CONTRACTOR shall provide all labor, supervision, material, equipment and inspection, prepare record books, furnish all materials, transportation, freight forwarding, customs clearance, material receiving and handling, warehousing services, utilities, supplies, tools, construction equipment, temporary facilities and each and every item of expense necessary for the **Catalyst, Inspection and Cleaning of Reactors and E-3302 Exchanger at JCP– EBSM during TA 2024** at the COMPANY facility in Jubail Industrial City.

SECTION – A

GENERAL TERMS &CONDITIONS

Terms & Conditions

The Scope of work described in this document shall be executed in accordance with the following
terms and conditions wherever it applicable to the subject job: In this section Contractor's &
COMPANY's responsibilities have been divided.
CONTRACTOR shall provide Manpower loading chart and equipment loading chart separately for Catalyst change Exhibit I and shall not combine with Manpower loading chart and equipment loading chart of Fixed equipment package EBSM Exhibit I. Overall Project Manager can be combined as one for Catalyst change Exhibit I and Fixed equipment package EBSM Exhibit I.

1.1 CONTRACTOR:

Terms & conditions with respect to contractor's responsibilities have been listed in below documents under different sub-heads.

CONTRACTOR's responsibilities include, but are not limited to the following:

General Terms & Conditions:

1.1.1 CONTRACTOR shall perform safe and timely execution of all work activities described in" CONTRACTOR's Scope".
1.1.2 Work performed by CONTRACTOR will be under the direction of COMPANY supervision. As necessary, additional support or direction can be obtained from the Area Supervisor-in-charge assigned by COMPANY.

1.1.3 CONTRACTOR shall comply with COMPANY's all General Instructions (GI) and Best Practices related to the scope of work. Copies of COMPANY General Instructions will be provided.

1.1.4 Supplying all qualified labor, supervision, tools, equipment, technical support, consumables, expendables, and temporary supplies necessary for, and reasonably related to complete Reactor and Dryer work.

1.1.5 Providing necessary cranes, lifting gears, valid test certificates, qualified operator with Saudi license and flag man for marching. Crane Operator should ensure out riggers positioned properly and away from concreate joints/loose soil or any other unsafe locations and get approval from "COMPANY" Maintenance prior to start the job

1.1.6 Providing necessary consumable and expendable supplies in enough quality and quantity for personnel to perform the scope of work safely and efficiently.

1.1.7 CONTRACTOR will ensure enough communication devices sets available for his team for effective site communication, which will require COMPANY information technology / security approvals to use right communication devices. However, for a "Contractor's "focal person contact, COMPANY may also provide few sets, if available & allowed by the prevailing rules and regulations at that time & if allowed by Govt Rules & Regulations.

1.1.8 CONTRACTOR shall perform the work on both Day & Night Shifts. Each Working Shift shall be of 12 Hours.

1.1.9 Arranging Breathing Apparatus for blinding, Air compressor, Calibrated Pressure Safety Device and Gauges etc. (Verified Breathing air cylinders contain Grade D air and are not filled via synthetic air blending)

1.1.10 Mobilize sufficient number of cranes based on work scope and accordingly to ensure to meet the TA schedule

1.1.11 If lumpsum jobs get delayed due to non-availability of crane and in such case if COMPANY will provide the required crane to CONTRACTOR, then the cost of crane usage for that period will be back charged to CONTRACTOR.

1.1.12 All the Heavy Equipment, rigging team should have COMPANY approved 3rd party certification and riggers should go through COMPANY's qualification process prior to mobilize.

1.1.13 CONTRACTOR should ensure to have immediate replacement of Crane operator if found not meeting company's compliance requirement

1.1.14 All Vacuum truck hoses must perform the continuity test and have tags placed on it. CONTRACTOR to follow COMPANY GI-1259.

1.1.15 CONTRACTOR shall comply with GI-2219 for Utilities hoses and connection and ensure hoses they bring on site are inspected and meet COMPANY Standards. The condition of hoses shall be stated on the inspection report with hydrotest report from Third party and inspection reports must accompany the CONTRACTOR when they

arrive at site and shall be immediately available for review by COMPANY representative.

1.1.16 CONTRACTOR shall ensure all received hoses, manifolds, Hard piping, Connection are equipped with identification inspection tag and supported with third party test certificate. (Anything found to be non-compliant shall not enter to our facility).

1.1.17 CONTRACTOR to ensure the shift turnover for critical and near critical path Equipment to be done at site

1.1.18 CONTRACTOR shall follow COMPANY Fatigue Policy CP # 1055. CONTRACTOR shall mobilize the personnel under their direction to comply with this policy to ensure personnel physical health without negatively affecting TA schedule or quality.

1.1.19 CONTRACTOR will be responsible for Transport, Food, Tea or Water for his staff. Company will allocate the Tent Area for Lunch or Dinner.

Actions required After PO Issuance:

1.1.20 CONTRACTOR will arrange receipt and transfer of all non-consumable material from the “COMPANY” T/A Warehouse to the work location. CONTRACTOR will return the balance of unused and undamaged material to the T/A warehouse after completion of work.

1.1.21 Provide forklifts and qualified forklift operators holding valid Saudi driving license. Forklift operators are required to attend “COMPANY” Powered Industrial Truck (PIT) training per “COMPANY” General Instruction. CONTRACTOR will schedule personnel for pre-T/A PIT training at the request and timing specified by “COMPANY” T/A management. Forklift truck will also require the flag man.

1.1.22 All tools, equipment, and resources are subject to initial and periodic inspection by “COMPANY” personnel to ensure safe and compliant use within the “COMPANY” facility. “COMPANY” reserves the right to reject use of any tool(s) or equipment for cause. Tool container shall be provided by CONTRACTOR.

1.1.23 Submit the Organization chart, defined by craft and name, all personnel required to execute and supervise the scope of work, 45 days in advance of the T/A start date as defined by “COMPANY” T/A management. CONTRACTOR will schedule personnel for required pre-T/A training at the request and timing specified by “COMPANY” T/A management and “COMPANY” Safety.

1.1.24 CONTRACTOR shall send their Admin Co-coordinator (Arabic) for coordination with Company's Admin & Security Department for preparation of ID's etc., as and when required.

1.1.25 CONTRACTOR will get approved Torque value charts equipment wise from COMPANY reliability and provide copy to TA Planning during planning phase, FORTY-FIVE (45) days prior to turnaround.

1.1.26 After issuance of PO, CONTRACTOR will be responsible to submit project manager & planning team names who will be involved with

"COMPANY"'s TA planning team for joint site visits & any exchange of information. CONTRACTOR'S planning team will be responsible for submitting the Lifting plans, method statements during Planning phase.

Scope Specific Terms & Conditions:

1.1.27 CONTRACTOR should have enough big size loading hoppers with side loading facility available for loading of catalyst / desiccant in accordance with company GI.

1.1.28 CONTRACTOR should provide adequate number of jumbo bags/ drums, bins, and pallets for disposing the spent catalyst to the designated area.

1.1.29 Vacuum truck to facility the vacuum out the spent catalyst to drum / Jumbo bags

~~1.1.30 CONTRACTOR shall have Super suckers / Vacuum trucks for X-3109 Active Carbon removal and Disposal at designated Facillity recommended by COMPANY.~~

1.1.31 CONTRACTOR shall have vacuum truck for sludge removal & any hydro jetting water residual which cannot be gravity drained & require vacuum truck.

1.1.32 CONTRACTOR should arrange Super Suckers / Vacuum Trucks and Loading Spreader beam for Jumbo Bags.

1.1.33 CONTRACTOR to consider jack hammering in Lumpsum quote. No additional charges shall be applicable for this task.

1.1.34 CONTRACTOR to use two(2) super suckers to vacuum simultaneously from each reactor R-3301 and R-3302. CONTRACTOR to comply to mobilize equipment & manpower to accomplish the scope of work completion with in the specified duration. CONTRACTOR to ensure enough quantity to mobilize Rigger II ,Crane, Fork lift, 2 TON capacity SS loading hopper to handle for R-3301 and R-3302.

1.1.35 CONTRACTOR to ensure the method statement on loading socks fitted with the stationary hopper in manner it reaches to the reactor and remain 40cm height from the bottom.

1.1.36 All Vacuum truck hoses must perform the continuity test and have tags placed on it. CONTRACTOR to follow COMPANY GI-1259.

1.1.37 CONTRACTOR shall arrange close circuit cameras for inspection, unloading and loading of catalyst / desiccant on all vessels.

1.1.38 CONTRACTOR needs to make necessary arrangements to collect & transfer Catalyst/Adsorbent from S-Chem designated area to the location.

1.1.39 CONTRACTOR to have plan to protect the catalyst / Dessicant from rain or adverse weather condition

1.1.40 Rigid ladder to mobilize by CONTRACTOR for entry

1.1.41 CONTRACTOR to have RC (royal commission) approved own trailers / Vacuum Trucks. CONTRACTOR shall make arrangement for dispose the spent catalyst to the disposal area outside of COMPANY

facilities as per recommendation from COMPANY EHS by providing trailers / trucks with driver and flagman.

1.1.42 Spent catalyst / desiccant to be filled in drums / Super sacks and labelled as per requirement and to be transported using trailer / Truck from COMPANY designated area to the location as per COMPANY recommended offsite disposal facility.

1.1.43 Contractor to ensure mobilize enough Super Sucker / vacuum trucks of maximum size available to meet the T/A schedule and to avoid potential delay at disposal facility

1.1.44 CONTRACTOR should follow COMPANY maintenance procedure MNT-GWP-0020 for using catalyst jumbo bags for loading and unloading. CONTRACTOR Should have enough netted basket for using catalyst jumbo bags for loading and unloading as per COMPANY maintenance procedure.

1.1.45 Provide portable Air compressors and certified hoses along with relevant crews.

1.1.46 CONTRACTOR shall have enough 24” air blowers / Saddle ventilation and sufficient air compressors to ventilate the equipment.

1.1.47 Provide hydro jetting machines & Turtle / armor suit with crews up to 20000 Psi capacities. Operating pressure beyond 3000 Psi will require approval from reliability also.

1.1.48 CONTRACTOR shall ensure the provision of enough torqueing crews and Torquing machine, nut splitters etc. for parallel jobs to avoid any delay because of resource deficiency.

1.1.49 In case while hydro jetting inside equipment produces LEL, BA may be required, contractor to have stand by BA accordingly.

1.1.50 Guarantee against defective workmanship shall be for the period of 2 weeks from the state of start-up.

1.1.51 Any deletion after award of PO, if deleted job information is conveyed before mobilization or 1 month before TA it shall not be charged.

1.1.52 CONTRACTOR will prepare the equipment for inspection up to the satisfaction level of COMPANY reliability, will coordinate with COMPANY reliability for inspection and will repair in accordance with the COMPANY reliability’s recommendation.

1.1.53 All necessary cleaning tools, “COMPANY” approved sprays & chemicals would be CONTRACTOR’S responsibility.

1.1.54 To perform any type of buffing work for lifting lugs and equipment NDT (DPT / UT / MPT) inspection requirements as recommended by COMPANY reliability & inspection team.

1.1.55 CONTRACTOR will transport reactor / vessel internals to & from the designated area for cleaning.

1.1.56 Where there would be a requirement of cleaning, Catalyst loading / unloading, forklift movement on site, special safety arrangements & barricades and warning boards will be installed by CONTRACTOR as per equipment & plant location.

1.1.57 All Inspections and get verification of work quality and final approval of cleaning & repair work.

1.1.58 Special precautions have to be taken to avoid water usage where no hydro blasting or water cleaning is required. Only manual cleaning would be done. Special Alerts would be placed by CONTRACTOR on such jobs

1.1.59 Common blinds will be held till all parties finish the work their area.

1.1.60 Follow the blind list and blind specification specified by COMPANY. Any deviation requires COMPANY approval like using less blind thickness.

1.1.61 CONTRACTOR will be responsible for all site coordination with Planning, Operation, Process & reliability as & when necessary to make sure that there is no lag time in between activities.

1.1.62 In Case, if there are multiple contractors to work on the same equipment in between its own activity, CONTRACTOR will be responsible to ensure effective communication and follow up with that CONTRACTOR to ensure that no unnecessary lag occur in this transition.

1.1.63 CONTRACTOR will get the final box up certificate after completion of all activities. All this box up certificates will be handed over to TA planning.

1.1.64 CONTRACTOR shall prepare for fabrication of Mesh Screen required for the scope.

1.1.65 Inspection of Mesh, Spares parts and Gaskets to ensure fit and finish per Drawings, and that meet SOW requirements. This activity shall be done in advance of T.A. at the request and timing specified by COMPANY.

1.1.66 CONTRACTOR shall arrange to collect and transport the catalyst / desicant / Activ carbon from COMPANY designated area that is Central ware House inside COMPANY facility and stage it in the desginated site location inside the COMPANY facility. This activity shall be done in advance of T.A. at the request and timing specified by COMPANY.

1.1.67 Engineering Lift Plan (refer GI 1238) must be submitted 120 days in advance to T.A. for 3rd party approval and necessary preparation works.

1.1.68 Provide diesel fuel (including on-site refueling) for CONTRACTOR equipment’s.

1.1.69 CONTRACTOR should follow and meet the GI-2219 requirement for Hoses and manifold.

1.1.70 All tools, equipment, and resources are subject to initial and periodic inspection by COMPANY personnel to ensure safe and compliant use within the COMPANY facility. COMPANY reserves the right to reject use of any tool(s) or equipment for cause.

1.1.71 CONTRACTOR shall arrange weighing scale to check weight of the screen catalyst / spent catalyst sent for waste regeneration or reuse.

1.1.72 CONTRACTOR shall submit / handover the QA/QC dossier after Turnaround completion.

Safety:

1.1.73 Providing full time Safety personnel whose sole responsibility shall be to ensure CONTRACTOR personnel conduct work in accordance with Rules and Regulations of “COMPANY”, and that good safe work practices are utilized at all times.

1.1.74 Performing work in accordance with “COMPANY” Safety procedures and requirements outlined in the “COMPANY” T/A EH&S Plan and compliance to all “COMPANY” General Instructions (GI). Copies of “COMPANY” General Instructions will be provided.

1.1.75 CONTRACTOR shall provide a well-trained & certified Permit receiver, Hole watch, fire watch & bottle watch.

1.1.76 CONTRACTOR will be responsible for all PPE’s for his manpower.

1.1.77 CONTRACTOR shall follow COMPANY Fatigue Policy CP # 1055. CONTRACTOR shall mobilize the personnel under their direction to comply with this policy to ensure personnel physical health without negatively affecting TA schedule or quality.

1.1.78 Safety officer’s final acceptance will be after face to face interview with “COMPANY” safety department.

Planning & monitoring

1.1.79 Visiting the job site to acquaint themselves with existing conditions.

1.1.80 CONTRACTOR’S Site management staff , Equipment and Leadership team like Supervisors/Foremen/Leads, Lead Planner QA/QC, etc. shall comply to the “COMPANY” plan for early mobilization as specified for necessary preparation work to understand the job , for site orientation , Crew’s planning as per P6 schedule , JSA’s , detailed assessment of work requirements , equipment & staff certifications and for setting up agreed temporary installations. CONTRACTOR shall mobilize the before mentioned craft at least by Fifteen (15) days ahead of start of S/D start date unless approved by TA Planning Superintendent or TA Manager and communicated by contracts department

1.1.81 Prestaging activity to be started 4 weeks in advance.

1.1.82 CONTRACTOR will submit daily progress report to TA planning, highlighting the work activities of the day, next day plan, equipment & manpower count, HSE statistics of the site. CONTRACTOR will also issue daily work schedule based on two shifts of 12 hours each

1.1.83 CONTRACTOR shall provide the On-Site Peak load & Org Chart with their technical manpower also on daily progress report.

1.1.84 At the end of the TA activity, a detailed report shall be submitted to COMPANY by CONTRACTOR. CONTRACTOR’s Final invoices will be approved on submission of consolidated dossier of NDT reports & Activity Report along with lesson learnt.

1.1.85 CONTRACTOR to provide maintenance progress updates and manpower count to COMPANY during each shift

1.1.86 CONTRACTOR Shall ensure the shift relieving to be done at job site for critical path equipment’s.

Handling of Additional & Discovery Work

1.1.87 For any additional work, please provide us unit rates for manpower craft wise and for all the Equipment's like cranes, lift trucks, hydro jetting m/c, pressure testing pumps, bundle pullers etc.

1.1.88 Any discovery work shall be invoiced separately and shall be based on "COMPANY" approved CMF (Change Management Form).

Restricted Access - Avoid Unnecessary Movement

1.1.89 Advising and warning CONTRACTOR personnel that Operations Central Control Rooms and other Operations Structures within the "COMPANY" facility are not to be entered or accessed FOR ANY REASON without operations approval and escort. Any unescorted CONTRACTOR found inside a Central Control Room or other Operations Structure is subject to removal and banishment from the "COMPANY" work site.

1.1.90 Advising and warning CONTRACTOR personnel that the Central Maintenance Shops and Maintenance Structures within the "COMPANY" facility are not to be entered or accessed FOR ANY REASON without maintenance approval and escort. Any unescorted CONTRACTOR found inside a Maintenance Shop or other Maintenance Structure is subject to removal and banishment from the "COMPANY" work site.

1.1.91 CONTRACTOR shall ensure presence of their personnel to the designated work area only. Any Person found in or around unrelated plant area, shall be subject to immediate removal from Plant. CONTRACTOR shall provide a suitable replacement immediately to avoid any effect on work progress.

House Keeping

1.1.92 Maintaining a job site that is always clean and free of debris. After completion of work, leave the area as clean as found.

1.1.93 Discarding all coke, sludge, damaged parts, packing/ scrap metals, and all other general rubbish from maintenance activities into designated waste containers provided by COMPANY. The CONTRACTOR shall make arrangements to shift waste containers to temporary waste storage areas designated by COMPANY.

1.1.94 Maintaining a job site that is always clean and free of debris. After completion of work, leave the area as clean as found.

1.2 **COMPANY:**

1.2.1 Isolation and Decontamination of Equipment/system.

1.2.2 Electrical & Instrument disconnections

1.2.3 Battery limit or common blinding which are common with other contractors.
1.2.4 Any Insulation & Refractory removal, repair or Installation activity
1.2.5 All sort of Painting work.
1.2.6 Any welding activity which is not specified in Scope of work.
1.2.7 Erection of all scaffolds and revisions as required by CONTRACTOR
1.2.8 Provide drawings, blinds, gaskets, spares or any other materials and consumables required for facilitate the subject job.
1.2.9 Provide utilities such as water, lights for internal and external use, Scaffolding, Insulation and any type of welding works recommended by Inspection team.
1.2.10 Office facilities for CONTRACTOR (as decided by COMPANY T/A management, either Blast Resistant Module for essential on-site personnel, or workspace in the T/A office for non-essential personnel)
1.2.11 Verification of All NDT Inspections, catalyst Unloading & loading, verification of work
quality and final approval of cleaning & repair work.
1.2.12 Tent with tables and chairs for CONTRACTOR lunch and rest break
1.2.13 Prayer facilities in designated work locations.
1.2.14 Drinking water around the clock.
1.2.15 All temporary lighting for confined space entry (required by GI, Class-1 Div-1)
1.2.16 All EHS meters and monitors required by General Instruction and will be provided by
COMPANY
1.2.17 Rest Shelters in designated work locations
1.2.18 Smoke Shelters in designated work locations
1.2.19 Sanitary facilities (toilets and hand wash stations)
1.2.20 All non-consumable material required to perform the scope of work
1.2.21 Inspection of work performed by CONTRACTOR
1.2.22 Making Equipment’s ready to blind.
1.2.23 COMPANY will provide manifest for the disposal of spent catalyst.
1.2.24 Conduct BSO Course and required courses for Permit Receiver (as required).
1.2.25 Issuance of ID cards and Vehicle stickers.
1.2.26 Issuance of material gate passes.
1.2.27 Issuance of Work Permits.

SECTION- B
SCOPE OF WORK

2. DESCRIPTION OF WORK-SPECIFIC:

2.1 REACTOR SCOPE OF WORK:

Catalyst change, Inspection and Cleaning for Reactors and Inspection cleaning of Exchanger E-3302 as per specified in detailed scope given below, but are not limited to the following:

UNIT:32

RESPONSIBILITY MATRIX		
SN #	**CONTRACTOR**	**S-CHEM**
1	**R-3203- FINISHING REACTOR** ➢ INSTALL BLINDS FOR STEAMING AND N2 PURGE AS PER OPERATION BLIND LIST. ❖ (BREATHING APPARATUS MUST BE USED AS PER GI). ❖ (HOLD FOR STEAMING AND N2 PURGE BY OPERATIONS). ➢ REMOVE END FLANGE FROM VENT VALVE. ➢ BLIND/DROP SPOOLS FOR ENTRY & MAINTENANCE ACTIVITIES. (BLIND LIST AND DRAWING PROVIDED BY OPS). ➢ OPEN TOP EXTERNAL MANWAY AND LOADING NOZZLE, INSTALL AIR MOVER FOR VENTILATION,ARRANGE INTERNAL LIGHTING & ACCESS LADDER. ➢ ALL INSTRUMENTS, PT, LT, AND LEVEL GLASS APPARATUS TAPS TO BE DISCONNECTED. ➢ OFFER FOR INITIAL INSPECTION FROM PROCESS ENGINEERING. ➢ COORDINATE TO ERECT INTERNAL SCAFFOLDING AS REQUIRED. ➢ PREPARE FOR ENTRY AND TO VACUUM THE SPENT CATALYST. ➢ VACUUM ALUMINA BALLS AND REMOVE FLOATING MESH SCREEN. ***** THERMO-COUPLES / PROBES ARE TO BE REMOVED DURING UNLOADING ACTIVITY AND TO BE INSTALLED BACK DURING LOADING ACTIVITY WHEN THE DESSICANT LEVEL REACHED THE THERMOCOUPLE LOCATION BY INSTRUMENT SUPPORT *****	➢ PROVIDE SDS, WAREHOUSE RESERVATIONS AND FORMS, DUMPING & RELOADING GUIDELINES, TALLY SHEETS AND SIGNATURE SHEETS AND EQUIPMENT DRAWING TO CONTRACTOR FOR DEVELOPS METHOD OF STATEMENT AND RESCUE PLAN. ➢ PROVIDE SCAFFOLDING ➢ PROVIDE ARRANGEMENT FOR REMOVAL / REINSTALLATION OF INSULATION AS PER REQUIREMENTS, ➢ PREPARE VESSEL FOR CONTRACTOR TO PERFORM THE JOB AS PER COMPANY PROCEDURES AND GENERAL INSTRUCTIONS. ➢ PROVIDE UTILITY WATER, N2 AND INTERNAL LIGHTING FACILITIES. ➢ PROVIDE LABELS / MANIFEST FOR CONTAINERS SPECIFIED BY ENVIRONMENTAL GROUP AND GATE PASSES. ➢ DPT FOR RANDOM/SUSPECTED NOZZLES, T-JOINTS AND WELD JOINTS INCLUDING SUPPORTS WELDS. UTT ON HEAD AND AS PER TML. ➢ SEE SNAKE / BORESCOPE INSPECTION. ➢ PAINTING WORK ➢ DISCONNECT AND RECONNECT INSTRUMENT CONNECTIONS. ➢ WELDING ACTIVITIES.

	➢ OPEN DUMPING NOZZLE AND PREPARE FOR CATALYST DUMPING. ➢ DUMP CATALYST THROUGH DUMPING NOZZLE ➢ ARRANGE FOR DUMP SPENT CATALYST INTO CONTAINERS SPECIFIED BY ENVIRONMENTAL GROUP. (ADDITIONAL PRECAUTIONS SHALL BE IN PLACE DURING MANWAY OPENING FOR AVOIDING SPILLAGE OF CATALYST BY UNCONTROLLED WAY). ➢ REMOVE THERMO-COUPLES / PROBES, CLEAN AND OFFER FOR INSPECTION. ➢ OPEN BOTTOM MANWAY. ➢ VACUUM ALUMINA BALLS FROM BOTTOM. ➢ OFFER FOR INITIAL INSPECTION BY PROCESS ENGINEER / RELIABILITY ➢ HAND CLEAN INTERNALS INCLUDING THERMOWELL / PROBE NOZZLES, ALL NOZZLES , GASKET SEATING AREA AND OFFER FOR DETAILED INSPECTION. ➢ POST CLEANING INSPECTION BY PROCESS / RELIABILITY / OPERATION. ➢ BUFFING SUPPORT USING PNEUMATIC TOOL FOR DPT AND UTT AS PER RELIABILITY RECOMMENDATION. ➢ CO-ORDINATE WITH S-CHEM RELIABILITY AND SUPPORT FOR DPT / UTT INSPECTION BY S-CHEM RELIABILITY. ➢ DPT SHALL BE CARRIED OUT FOR RANDOM NOZZLE, T-JOINTS & WELD JOINTS INCLUDING SUPPORT WELDS. UTT SHALL BE TAKEN AS PER TML BY RELIABILITY. ➢ COORDINATE WITH RELIABILITY AND PROCESS ENGINEERING FOR BORESCOPE VESSEL BOTTOM NOZZLE INSPECTION. ➢ OPEN SKIRT MANWAYS. INSTALL SADDLE VENTILATION AND VENTILATE UNTIL READY FOR OCCUPANCY. ARRANGE INTERNAL LIGHTING ➢ COORDINATE TO ERECT SCAFFOLDING AND TO REMOVE INSULATION FOR SKIRT PIPING THICKNESS MONITORING BY S-CHEM RELIABILITY. ➢ COORDINATE TO RESTORE INSULATION AND TO REMOVE INTERNAL SCAFFOLDING AS REQUIRED. ➢ CLOSE SKIRT MANWAYS ➢ COMPLETE INSPECTION RECOMMENDATION AS PER RELIABILITY AND PROCESS ENGINEERING. ➢ PREPARE FOR CATALYST LOADING. ➢ INSTALL AND BOX-UP BOTTOM MANWAY AND DUMPING NOZZLE. ➢ LOAD ALUMINA BALLS ACCORDING TO PROCESS	

	LOADING DIAGRAM. ➢ LOAD DESSICANT BY SOCK LOADING TO PREVENT FREE FALL OF LARGER THAN 0.5 METER ALWAYS (ALWAYS SEEKS GUIDANCE FROM PROCESS ENGINEERING DURING CATALYST LOADING). ➢ INSTALL FOLATING MESH SCREEN AND LOAD ALUMINA BALLS BY SOCK LOADING PER PROCESS LOADING DIAGRAM ➢ OFFER FOR INSPECTION FROM PROCESS ENGINEERING AND RELIABILITY. ➢ ALL INSTRUMENTS, PT, LT, AND LEVEL GLASS APPARATUS TAPS TO BE RE-CONNECTED. ➢ COORDINATE TO REMOVE INTERNAL SCAFFOLDING. ➢ REMOVE INTERNAL LIGHTING AND ACCESS LADDER AND ANY OTHER UNWANTED MATERIALS FROM THE REACTOR. ➢ OFFER FOR FINAL INSPECTION FROM PROCESS ENGINEERING AND RELIABILITY AND OPERATION. ➢ RETURN THE COMPLETED TALLY SHEETS AND SIGNATURE SHEETS TO PROCESS ENGINEERING. ➢ PREPARE FOR FINAL BOX-UP (VESSEL CLOSURE FORM SHALL BE COMPLETED AND SIGNED OFF BEFORE START MANWAY BOX-UP). ➢ INSTALL AND BOX-UP TOP MANWAY AND LOADING NOZZLE AND TORQUE AS REQUIRED. ➢ REMOVE BLINDS/REINSTALL SPOOLS AND PREPARE FOR COMMISSIONING ACTIVITIES. **NOTE:** • CONTRACTOR SHOULD ARRANGE DRUMS. • TRANSPORT THE SPENT CATALYST / DESICCANT FROM COMPANY TO RECOMMENDED OFFSITE DISPOSAL FACILITY. • CONTRACTOR TO HAVE PLAN TO PROTECT THE FRESH CATALYST FROM RAIN OR ADVERSE WEATHER CONDITION.	

UNIT 33

RESPONSIBILITY MATRIX		
SN #	**CONTRACTOR**	**S-CHEM**
1	**R-3301- 1ST STAGE DEHYDROGENATOR** ➢ INSTALL BLINDS FOR STEAMING AND N2 PURGE AS PER OPERATION BLIND LIST. ❖ (BREATHING APPARATUS MUST BE USED AS PER GI).	➢ PROVIDE SDS, WAREHOUSE RESERVATIONS AND FORMS, DUMPING & RELOADING GUIDELINES, TALLY SHEETS AND

	❖ (HOLD FOR STEAMING AND N2 PURGE BY OPERATIONS). ➢ REMOVE END FLANGE FROM VENT VALVE. ➢ BLIND/DROP SPOOLS FOR ENTRY & MAINTENANCE ACTIVITIES. (BLIND LIST AND DRAWING PROVIDED BY OPS). ➢ PREPARE FOR OFF LOADING OF CATALYST. ➢ OPEN TOP MANWAYS AND DUMP NOZZLES, INSTALL AIR MOVER FOR VENTILATION,ARRANGE INTERNAL LIGHTING & ACCESS LADDER. ➢ ALL INSTRUMENTS, PT, LT, AND LEVEL GLASS APPARATUS TAPS TO BE DISCONNECTED. ➢ OFFER FOR INITIAL INSPECTION FROM PROCESS ENGINEERING. ➢ COORDINATE TO ERECT INTERNAL SCAFFOLDING AS REQUIRED. ➢ VACUUM CATALYST FROM TOP MANWAY TO SUPER SUCKER / VACUUM TRUCK. (SUPPLIED FRESH AIR REQUIRED FOR THE ENTRANT). ➢ CLEAN INNER AND OUTER SCREEN SIMULTANEOUSLY USING SS WIRE BRUSH WHILE VACUUMING, PROCESS ENGINEER & RELIABILITY WILL INSPECT FOR EVERY 1.5M CLEANING PROGRESS. ➢ ARRANGE CAMERA FOR INSPECTION. ➢ EXTRA CARE HAS TO BE TAKEN IF WHILE USING NON SPARKING (BRASS) JACK HAMMERS FOR LOOSING HARD CATALYST. ➢ SUPPORT S-CHEM INSTRUMENT TEAM DURING REPLACEMENT OF THERMOCOUPLES. ➢ BUFFING SUPPORT USING PNEUMATIC TOOL FOR DPT AND UTT AS PER RELIABILITY RECOMMENDATION AS REQUIRED. ➢ COORDINATE WITH RELIABILITY AND PROCESS ENGINEERING FOR BORESCOPE VESSEL NOZZLE INSPECTION. ➢ OPEN EXTERNAL BOTTOM MANWAYS. ➢ VACUUM SPENT CATALYST IN BETWEEN SCREENS THROUGH HATCH HOLES. ➢ OFFER FOR INITIAL INSPECTION BY PROCESS ENGINEERING / RELIABILITY. ➢ COORDINATE TO ERECT SCAFFOLDING PLATFORM AS REQUIRED AT BOTTOM FOR THERMOCOUPLE. ➢ CLEAN REACTOR BOTTOM, INTERNALS INCLUDING ALL NOOZLES / INSTRTUMENT TAPS AND GASKET SEATING AREAS. ➢ CLEAN REACTOR INTERNALS / PRESSURE TAPPING' S/ VACUUM CONNECTION LINES. ➢ OPEN BOTTOM INTERNAL MANWAY AND OPEN HATCH COVER / CUT GRIND, INSPECT AND CLEAN INTERNAL HATCHES. ➢ POST CLEANING INSPECTION BY PROCESS / RELIABILITY / OPERATION. ➢ COMPLETE INSPECTION RECOMMENDATION AS PER RELIABILITY AND PROCESS ENGINEERING. ➢ REMOVE SCAFFOLDING PLATFORM FROM BOTTOM. ➢ CLOSE INSPECTION HATCH COVER / TACK WELDING ➢ CLOSE BOTTOM EXTERNAL MANWAYS (02) / INSTALL WIRE MESH	SIGNATURE SHEETS AND EQUIPMENT DRAWING TO CONTRACTOR FOR DEVELOPS METHOD OF STATEMENT AND RESCUE PLAN. ➢ PROVIDE SCAFFOLDING ➢ PROVIDE ARRANGEMENT FOR REMOVAL / REINSTALLATION OF INSULATION AS PER REQUIREMENTS, ➢ PREPARE VESSEL FOR CONTRACTOR TO PERFORM THE JOB AS PER COMPANY PROCEDURES AND GENERAL INSTRUCTIONS. ➢ PROVIDE UTILITY WATER, N2 AND INTERNAL LIGHTING FACILITIES. ➢ PROVIDE LABELS / MANIFEST FOR CONTAINERS SPECIFIED BY ENVIRONMENTAL GROUP AND GATE PASSES. ➢ DPT FOR RANDOM/SUSPECTED NOZZLES, T-JOINTS AND WELD JOINTS INCLUDING SUPPORTS WELDS. UTT ON HEAD AND AS PER TML. ➢ SEE SNAKE / BORESCOPE INSPECTION. ➢ PAINTING WORK ➢ DISCONNECT AND RECONNECT INSTRUMENT CONNECTIONS. ➢ WELDING ACTIVITIES.

	ENTRY THROUGH BOTTOM 24" MANWAY FOR 60" PIPING AND MIXER UNIT CLEANING. ➢ **CUT AND OPEN 24" CAP FOR MIXER INSPECTION FROM REACTOR BOTTOM LINE. (BY OTHERS)** ➢ INSTALL AIR MOVER / ALLOW VENTILATION ➢ ENTRY THROUGH REACTOR BOTTOM LINE ➢ CLEAN/VACUUM THE INLET PIPING (MIXER) / PIPE INTERNAL CLEANING & OFFER MIXER INSPECTION. ➢ POST CLEANING INSPECTION BY PROCESS / RELIABILITY / OPERATION FOR MIXER. ➢ COMPLETE INSPECTION RECOMMENDATION AS PER RELIABILITY AND PROCESS ENGINEERING. **CATALYST LOADING** ➢ PREPARE FOR CATALYST LOADING / INSTALL HOPPERS ON TOP MANWAY. ➢ PROCESS INSPECTION BEFORE CATALYST LOADING. ➢ LOAD CATALYST- SOCK LOADING. ➢ PROCESS INSPECTION AT REGULAR INTERVALS DURING CATALYST LOADING. ➢ REPAIR WORK OF SCREEN / PATCH WORK. ➢ REPLACE DEFLECTOR VACUUM HOSES. ➢ REMOVE AIR MOVER FROM 24" CAP MANWAY. ➢ COORDINATE TO REMOVE INTERNAL SCAFFOLDING. ➢ REMOVE INTERNAL LIGHTING AND ACCESS LADDER AND ANY OTHER UNWANTED MATERIALS FROM THE REACTOR. ➢ OFFER FOR FINAL INSPECTION FROM PROCESS ENGINEERING AND RELIABILITY AND OPERATION. ➢ RETURN THE COMPLETED TALLY SHEETS AND SIGNATURE SHEETS TO PROCESS ENGINEERING. ➢ PREPARE FOR FINAL BOX-UP (VESSEL CLOSURE FORM SHALL BE COMPLETED AND SIGNED OFF BEFORE START MANWAY BOX-UP). ➢ **INSTALL, FITUP, WELD 24” CAP OF MIXER. (BY OTHERS)** ➢ ALL INSTRUMENTS, PT, LT, AND LEVEL GLASS APPARATUS TAPS TO BE RE-CONNECTED. ➢ INSTALL AND BOX-UP TOP MANWAY AND LOADING NOZZLE AND TORQUE AS REQUIRED. ➢ REMOVE BLINDS/REINSTALL SPOOLS AND PREPARE FOR COMMISSIONING ACTIVITIES. **NOTE:** • TRANSPORT THE SPENT CATALYST / DESICCANT FROM COMPANY TO RECOMMENDED OFFSITE DISPOSAL FACILITY. • CONTRACTOR TO ENSURE MOBILIZE ENOUGH SUPER SUCKER / VACUUM TRUCKS OF MAXIMUM SIZE AVAILABLE TO MEET THE T/A SCHEDULE AND POTENTIAL DELAY AT DISPOSAL FACILITY • CONTRACTOR TO HAVE PLAN TO PROTECT THE FRESH CATALYST FROM RAIN OR ADVERSE WEATHER CONDITION.	
2	**R-3302- 2ND STAGE DEHYDROGENATOR**	

	➢ INSTALL BLINDS FOR STEAMING AND N2 PURGE AS PER OPERATION BLIND LIST. ❖ (BREATHING APPARATUS MUST BE USED AS PER GI). ❖ (HOLD FOR STEAMING AND N2 PURGE BY OPERATIONS). ➢ REMOVE END FLANGE FROM VENT VALVE. ➢ BLIND/DROP SPOOLS FOR ENTRY & MAINTENANCE ACTIVITIES. (BLIND LIST AND DRAWING PROVIDED BY OPS). ➢ PREPARE FOR OFF LOADING OF CATALYST. ➢ ALL INSTRUMENTS, PT, LT, AND LEVEL GLASS APPARATUS TAPS TO BE DISCONNECTED. ➢ OPEN TOP MANWAYS INSTALL AIR MOVER FOR VENTILATION,ARRANGE INTERNAL LIGHTING & ACCESS LADDER. ➢ OPEN INTERNAL MANWAYS. ➢ OFFER FOR INITIAL INSPECTION FROM PROCESS ENGINEERING. ➢ COORDINATE TO ERECT INTERNAL SCAFFOLDING AS REQUIRED. ➢ VACUUM SPENT CATALYST BY SUPER SUCKER / VACUUM TRUCK. (SUPPLIED FRESH AIR REQUIRED FOR THE ENTRANT). ➢ CLEAN INNER AND OUTER SCREEN SIMULTANEOUSLY USING SS WIRE BRUSH WHILE VACUUMING, PROCESS ENGINEER & RELIABILITY WILL INSPECT FOR EVERY 1.5M CLEANING PROGRESS. ➢ ARRANGE CAMERA FOR INSPECTION. ➢ EXTRA CARE HAS TO BE TAKEN IF WHILE USING NON SPARKING (BRASS) JACK HAMMERS FOR LOOSING HARD CATALYST. ➢ SUPPORT S-CHEM INSTRUMENT TEAM DURING REPLACEMENT OF THERMOCOUPLES. ➢ BUFFING SUPPORT USING PNEUMATIC TOOL FOR DPT AND UTT AS PER RELIABILITY RECOMMENDATION AS REQUIRED. ➢ COORDINATE WITH RELIABILITY AND PROCESS ENGINEERING FOR BORESCOPE VESSEL NOZZLE INSPECTION. ➢ OPEN EXTERNAL BOTTOM MANWAYS. ➢ COORRDINATE TO ERECT SCAFFOLDING IN PARABOLIC DEFELECTOR FOR THERMOCOUPLE. ➢ CLEAN PARABOLIC DEFELECTOR. ➢ POST CLEANING INSPECTION BY PROCESS / RELIABILITY / OPERATION FOR PARABOLIC DEFELECTOR. ➢ COORRDINATE TO REMOVE SCAFFOLDING FROM PARABOLIC DEFELECTOR. ➢ CLOSE BOTTOM DEFLECTOR MANWAY / INSTALL WIRE MESH. ***** E-3302 RM/STEAM INTERCHANGER***** ➢ ENTRY THRU TOP MANWAY FOR **E-3302** INSPECTION AND CLEANING. ➢ AIR BLOW TO CLEAN E-3302 TUBES (3135NOS.) ➢ OFFER FOR INSPECTION BY RELIABILITY AND	➢ PROVIDE SDS, WAREHOUSE RESERVATIONS AND FORMS, DUMPING & RELOADING GUIDELINES, TALLY SHEETS AND SIGNATURE SHEETS AND EQUIPMENT DRAWING TO CONTRACTOR FOR DEVELOPS METHOD OF STATEMENT AND RESCUE PLAN. ➢ PROVIDE SCAFFOLDING ➢ PROVIDE ARRANGEMENT FOR REMOVAL / REINSTALLATION OF INSULATION AS PER REQUIREMENTS, ➢ PREPARE VESSEL FOR CONTRACTOR TO PERFORM THE JOB AS PER COMPANY PROCEDURES AND GENERAL INSTRUCTIONS. ➢ PROVIDE UTILITY WATER, N2 AND INTERNAL LIGHTING FACILITIES. ➢ PROVIDE LABELS / MANIFEST FOR CONTAINERS SPECIFIED BY ENVIRONMENTAL GROUP AND GATE PASSES. ➢ DPT FOR RANDOM/SUSPECTED NOZZLES, T-JOINTS AND WELD JOINTS INCLUDING SUPPORTS WELDS. UTT ON HEAD AND AS PER TML. ➢ SEE SNAKE / BORESCOPE INSPECTION. ➢ PAINTING WORK ➢ DISCONNECT AND RECONNECT INSTRUMENT CONNECTIONS. ➢ WELDING ACTIVITIES.

	PROCESS. ********** ➢ OPEN EXTERNAL BOTTOM MANWAYS. ➢ OPEN INSPECTION HATCH COVER / CUT WITH GRINDER ➢ VACUUM SPENT CATALYST INBETWEEN PARABOLIC DEFLECTOR & INNER SCREEN. ➢ OFFER INITIAL INSPECTION BY PROCESS ENGINEERING. ➢ PERFORM INTERNAL CLEANING INCLUDING ALL NOOZLES / INSTRUMENT TAPS. ➢ POST CLEANING INSPECTION BY PROCESS / RELIABILITY / OPERATION. ➢ COMPLETE INSPECTION RECOMMENDATION AS PER RELIABILITY AND PROCESS ENGINEERING. ➢ CLOSE INSPECTION HATCH COVER / TACK WELDING ➢ CLOSE EXTERNAL BOTTOM MANWAYS / INSTALL WIRE MESH. **CATALYST LOADING** ➢ PREPARE FOR CATALYST LOADING / INSTALL HOPPERS ON TOP MANWAY. ➢ PROCESS INSPECTION BEFORE CATALYST LOADING. ➢ LOAD CATALYST- SOCK LOADING ➢ PROCESS INSPECTION AT REGULAR INTERVALS DURING CATALYST LOADING ➢ REPLACE EJECTOR VACUUM HOSES. ➢ OFFER FOR FINAL INSPECTION FROM PROCESS ENGINEERING AND RELIABILITY AND OPERATION. ➢ RETURN THE COMPLETED TALLY SHEETS AND SIGNATURE SHEETS TO PROCESS ENGINEERING. ➢ PREPARE FOR FINAL BOX-UP (VESSEL CLOSURE FORM SHALL BE COMPLETED AND SIGNED OFF BEFORE START MANWAY BOX-UP). ➢ ALL INSTRUMENTS, PT, LT, AND LEVEL GLASS APPARATUS TAPS TO BE RE-CONNECTED. ➢ INSTALL AND BOX-UP TOP MANWAY AND LOADING NOZZLE AND TORQUE AS REQUIRED. ➢ REMOVE BLINDS/REINSTALL SPOOLS AND PREPARE FOR COMMISSIONING ACTIVITIES. **NOTE:** • TRANSPORT THE SPENT CATALYST / DESICCANT FROM COMPANY TO RECOMMENDED OFFSITE DISPOSAL FACILITY. • CONTRACTOR TO ENSURE MOBILIZE ENOUGH SUPER SUCKER / VACUUM TRUCKS OF MAXIMUM SIZE AVAILABLE TO MEET THE T/A SCHEDULE AND POTENTIAL DELAY AT DISPOSAL FACILITY • CONTRACTOR TO HAVE PLAN TO PROTECT THE FRESH CATALYST FROM RAIN OR ADVERSE WEATHER CONDITION.	

2.2 **Tentative work Schedule:**

2.2.1 TA Shutdown Down commencement start date (tentatively) – 7st Jan' 2024._Tentative system wise

Maintenance window provided with respect to Equipment's. However, CONTRACTOR shall follow the COMPANY level 3 schedule provided to CONTRACTOR..

S #	Unit	System	Tag#	Equipment Name	Maintenance system Window Tentative Dates & Duration
1	32	FINISHING REACTOR SYSTEM	R-3203	Finishing Reactor	17-Jan-24 to 05-Feb-24 (20 days)
2	33	DEHYDRO SYSTEM	R-3301	1st Stage Dehydrogenator	16-Jan-24 to 04-Feb-24 (20 days)
3	33		R-3302 / E-3302	2nd Stage Dehydrogenator	

3 DRAWINGS, SPECIFICATIONS & PROCEDURES

Specifications, standards, procedures, drawings and Company's General Instructions shall apply to Engineering and construction works when applicable. All above documents shall be collected from Turnaround Planning Section after having NDA signed with COMPANY.

4 GUIDELINES

4.1 All work should follow COMPANY Standards and Specifications.

4.2 All work outside the above codes, standards and specifications shall follow COMPANY guidelines and practices.

4.3 CONTRACTOR shall comply with COMPANY Policies, General Instructions and Work Procedures regarding the use of Personal Protective Equipment's (PPE).

4.4 CONTRACTOR shall comply with COMPANY Safety and Security program Exhibit III (more details can be sought out later by CONTRACTOR as applicable)

4.5 COMPANY may from time to time and at any time require CONTRACTOR to suspend performance hereunder completely or partially for whatever length of time COMPANY may elect. The time for completion shall be extended by each period that the completion date is necessarily delayed by (a) the actions or omissions of COMPANY or another independent contractor that is directly responsible to COMPANY (unless such delay is due to CONTRACTOR's actions or failures to act). In case COMPANY requires suspending the performance of work, CONTRACTOR shall be given reasonable delivery extensions.

4.6 CONTRACTOR shall provide a qualified safety officer when there is work in the Plant. This safety officer shall not do any other work, other than safety.

4.7 Anything not listed in the CONTRACTOR's offer / Exhibit – I, Scope of Work, but appearing on the drawings / attachments shall be completed by CONTRACTOR, with no additional charges.

4.8 CONTRACTOR should utilize COMPANY recommended sub-contractors / manufacturers, as per Exhibit I Scope of Work, Attachment -I.

4.9 CONTRACTOR shall ensure presence of their personnel to the designated work area only. Any Person found in or around unrelated plant area, shall be subject to immediate removal from Plant. CONTRACTOR shall provide a suitable replacement immediately to avoid any effect on work progress

5.0 GENERAL REQUIREMENT

The Section 3.0 above shall prevail in the event of any inconsistency on the text hereunder.

5.1 COMPANY's REPRESENTATIVE

COMPANY will maintain, as required, a representative hereafter called the "COMPANY Representative". COMPANY Representative will provide liaison between COMPANY and CONTRACTOR and represent COMPANY in all matters covered by this Contract, including negotiating and approving changes.

COMPANY's Representative will be the only COMPANY employee authorized to represent COMPANY with respect to this Contract. Examples of his functions are to:

5.1.1 Review and approve designs, specifications, requisitions and purchase orders as required by this Contract.

5.1.2 Establish and maintain field liaison between CONTRACTOR's Representative and COMPANY.

5.1.3 Review CONTRACTOR's construction schedule and field performance.

5.1.4 Make such inspections of the Facility during construction, as COMPANY may desire in order to check the progress of the Work and quality of workmanship and Materials.

5.1.5 Negotiate and approve field changes.

5.1.6 Review CONTRACTOR’s administrative procedures.

5.1.7 If, in COMPANY's considered opinion, the conduct or performance of any of CONTRACTOR's personnel is unsatisfactory in any way, CONTRACTOR, if COMPANY so requests, shall at CONTRACTOR's sole cost and expense promptly replace such person or persons with personnel suitably qualified.

At the start of Work, CONTRACTOR shall develop procedures for handling correspondence, Material orders, quotation analyses, drawings, schedules and other administrative or engineering aspects of Work to the satisfaction of COMPANY.

5.2 CONTRACTOR’s PERSONNEL

CONTRACTOR shall assign a full-time Project Manager (hereafter called “CONTRACTOR Representative”) to provide liaison between CONTRACTOR and COMPANY and to represent CONTRACTOR in all matters covered by this Contract, including negotiating and approving COMPANY’s authorized changes. The CONTRACTOR’s Representative shall not be changed during the course of the Work unless COMPANY approves such change in writing.

When fieldwork is in progress CONTRACTOR’s Representative shall act in full charge of CONTRACTOR’s fieldwork and maintain field liaison between CONTRACTOR and COMPANY’s Representatives. Examples of his functions are to:

5.2.1 Negotiate and approve for CONTRACTOR, COMPANY’s field changes authorized by COMPANY.

5.2.2 Represent CONTRACTOR in matters pertaining to construction performance and quality, scheduling, administrative procedures and financial controls

5.2.3 Represent CONTRACTOR during all required tests.

5.2.4 Coordinate with COMPANY Project Engineer on all job activities

5.2.5 Remove any person from CONTRACTOR staff in case the same is not fully complying with the COMPANY requirements or when requested by COMPANY Representative and shall provide a suitable replacement within a week time and without affecting the work progress.

5.3 KEY PERSONNEL

CONTRACTOR shall maintain the following persons at the job site on a full-time basis at all times during the course of the Work and shall not remove or reassign such personnel without COMPANY's prior approval:

a. CONTRACTOR's Project Manager
b. Safety Engineer
c. Quality Control Engineer.
d. Work Permit Receiver
e. Direct working resources and staff.

5.4 SPECIAL TOOLS FOR EQUIPMENT INSTALLATION

All special tools and/or equipment required for installation and/or maintenance of equipment shall be furnished by CONTRACTOR.

5.5 WORK PERMITS

At least thirty (30) days prior to mobilization, CONTRACTOR shall familiarize himself with COMPANY's Plant Operations and Maintenance Work Permit procedures and CONRACTOR's workers shall be trained to receive Work Permits in a timely manner. After approval by COMPANY, CONTRACTOR shall comply with this Work Permit procedure. COMPANY will not be responsible for delays due to CONTRACTOR's failure to submit its Work Permits in a timely fashion or failure to comply with the approved Work Permit procedure.

5.6 FIELD INSPECTION

5.6.1 Inspection by COMPANY

COMPANY may visit and inspect any and all of the Work and Materials at any time, and CONTRACTOR shall provide safe and proper facilities therefor. CONTRACTOR shall at all times during the performance of the Work keep a competent supervisor, fluent in the English language, in the immediate vicinity of the Work areas to receive communications from COMPANY and to supervise the performance of this Contract.

COMPANY shall inspect all works and witness all tests. Prior notice shall be given to COMPANY for any inspection or witnessing as:

a. THREE (03) working days for inside the COMPANY facility.

b. FOURTEEN (14) working days for outside the COMPANY facility.

c. Testing requirements shall be based on COMPANY inputs.

d. CONTRACTOR to determine hold points for inspection and test witnessing.

e. COMPANY reserves the right to assign any 3rd party inspection agency, as needed.

5.6.2 CONTRACTOR's Inspection Responsibility

CONTRACTOR shall be solely responsible for thorough inspection and testing of the Work and for the quality of the Work. COMPANY's inspection of, testing of, approval of, or agreement to the performance of any part of the Work shall in no way relieve CONTRACTOR of its responsibility for the Work. CONTRACTOR shall:

5.6.2.1 Submit Inspection Testing Plan for COMPANY review and comments.

5.6.2.2 Welders must be tested & certified by COMPANY, in order to avoid re-do jobs & only those qualified welders to work on this project.

5.6.2.3 In case of HDPE fusion welding CONTRACTOR must be qualified by COMPANY for both the machine and operator.

5.6.2.4 For NDT related works the interpretation must be done by qualified independent level 2 or 3 person.

5.6.2.5 Must submit their QA/QC for review and approval including Welding Procedure & Specification (WPS) & Project Quality Records (PQR's) prior to awarding of contract.

5.6.3 Inspection by CONTRACTOR

Whenever any part of CONTRACTOR's Work depends on existing work or work or Material provided by COMPANY or others, CONTRACTOR shall inspect and measure such other work or Material and promptly notify COMPANY of each defect or discrepancy in such other work or Material that may render it unsuitable for proper execution of CONTRACTOR's Work or proper functioning of the Facility. If CONTRACTOR fails to notify COMPANY's Representative of any such defect or

discrepancy before performing CONTRACTOR's independent Work, and such defect or discrepancy would have been discovered in the course of a reasonably thorough visual inspection and measurement, COMPANY may condemn the Work or Material involved and CONTRACTOR shall correct such defect or discrepancy on the same basis as if it were defective Work by CONTRACTOR as per General Terms and Conditions (copy attached).

5.7 COMPLETION

5.7.1 Mechanical Completion

CONTRACTOR shall cause Mechanical Completion of the Facility to occur. Mechanical Completion shall mean that all requirements of this Contract have been met with respect to:

5.7.1.1 Construction
5.7.1.2 Safety
5.7.1.3 Ability to physically operate

Prior to Mechanical Completion, CONTRACTOR shall demonstrate to COMPANY all portions of the facility:

- have been built according to the terms of this contract
- operate as intended

5.7.2 Acceptance by COMPANY

All Work will be subject to Acceptance by COMPANY pursuant this Exhibit–I Scope of Work

5.8 TIME FOR COMPLETION

5.8.1 Initial Time for Completion

CONTRACTOR shall cause the Facility to achieve Mechanical Completion, on or before the applicable date specified in the contract. The time for completion shall be extended only in accordance with the provisions of the Terms and Conditions. COMPANY shall reduce the time for completion only with the written consent of CONTRACTOR.

5.8.2 Failure to Maintain Schedule

If at any time during the progress of the Work, CONTRACTOR's actual progress is inadequate to meet the approved schedule and as established, COMPANY shall have the right, but not the

obligation, to so notify CONTRACTOR who shall thereupon take such steps as may be necessary to remedy the inadequacy. If within a reasonable period (as determined by COMPANY and not to exceed THREE (03) working days) CONTRACTOR does not improve performance to meet the schedule, COMPANY may require an increase in labor force, number of shifts, overtime operations, or additional days of work per week without additional compensation to CONTRACTOR, to eliminate or reduce the possibility of delayed completion. COMPANY may make such requirements in addition to any other rights or remedies that COMPANY may have.

5.8.3 Failure to Complete on Schedule

If CONTRACTOR does not cause the Facility to achieve Mechanical Completion within the time, COMPANY may elect to take over and complete the Work pursuant to the Terms and Conditions. COMPANY may take over and complete the Work in addition to any other rights or remedies that COMPANY may have.

6.0 MATERIALS, SERVICES AND UTILITIES FURNISHED BY COMPANY

COMPANY shall furnish or cause to be furnished to CONTRACTOR, the following items for or in connection with performance of the Work.

6.1 **COMPANY** shall provide: Please refer clause no. 1.2, 2.1(Responsibility matrix COMPANY) & 3

6.2 In addition to Clause no. 1.1, 2.1(Responsibility matrix CONTRACTOR) CONTRACTOR should provide

6.2.1 Providing a Level –II T/A schedule showing start date, sequence of activities, end date, crew sizes and craft mix. All work is to be planned and scheduled to complete as soon as possible. After award of PO contractor will submit detailed plan in Primavera

6.2.2 Arranging receipt and transfer of all non-consumable material from the COMPANY T/A Warehouse to the work location. CONTRACTOR will return the balance of unused and undamaged material to the T/A warehouse after completion of work.

6.2.3 Supplying all qualified labor, supervision, tools, equipment, technical support, consumables, expendables, and temporary supplies necessary for, and reasonably incidental to complete Repair & Cleaning of Columns

6.2.4 Providing necessary consumable and expendable supplies in sufficient quality and quantity for personnel to perform the scope of work safely and efficiently.

6.2.5 Providing, Breathing Apparatus for blinding, Air compressor, Certified & Tested Lifting & Pulling tools and tackles, Calibrated Pressure gauges, Test equipment, Safety Device, chemical hoses Hand Tools & Power Tools etc. These should meet or exceed COMPANY relevant GI's.

6.2.6 Blind lists provided in bidding package are tentative for estimation purpose. Blinding at site to be done as per Operations Blind list provided with marked up PID's. These lists will be provided at later stage after award of PO.

6.2.7 Provide forklifts and qualified forklift operators holding valid Saudi driving license. Forklift operators are required to attend COMPANY Powered Industrial Truck (PIT) training per COMPANY General Instruction. CONTRACTOR will schedule personnel for pre-T/A PIT training at the request and timing specified by COMPANY T/A management.

7.0 REPORTING REQUIREMENTS

7.1 CONTRACT DAILY REPORT

CONTRACTOR shall submit progress reports at end of each shift which provide manpower (including manual, non-manual and sub-contractors) present for work, a listing of all equipment on site (detailed by type and quantity), and any Safety related issues. Reports shall be submitted in the format established with continuation pages on forms proposed by CONTRACTOR and acceptable to the COMPANY Representative.

7.2 DAILY PROGRESS REPORT

CONTRACTOR shall submit a written daily progress report, which will cover daily field work. The report shall summarize the status of job and the overall progress achieved for the CONTRACTOR's detailed work schedule.

8.0 DATA REQUIREMENTS

After completion of turnaround contractor will submitted detailed report. This report will contain technical details, manpower & logistic details.

9.0 QUALITY CONTROL REQUIREMENTS

9.1 QUALITY PLAN

9.1.1 CONTRACTOR shall provide a comprehensive; project specific Quality Plan that identifies CONTRACTOR's procedures for Quality Control during the Construction execution phase of the Work. The Quality Plan shall be presented to COMPANY for approval at least 45 days prior to beginning turnaround. After approval by COMPANY, CONTRACTOR shall comply with requirements of the Quality Plan.

9.1.2 Should any inspection or test reveal any defect in CONTRACTOR supplied materials or in CONTRACTOR's Work, CONTRACTOR shall correct such defect at no cost to COMPANY.

9.1.3 Hydro test of all piping shall be at in-service pressure of piping. All joints shall be exposed during hydro test. Hydro test plan shall be submitted with the Quality Plan.

9.1.4 Pipe should be cleaned thoroughly before fitment so that unwanted dust, etc should not be present.

9.1.5 Pipe Line should be made ready for commissioning as per schedule, including testing, inspection, cleaning, etc.

9.1.6 CONTRACTOR shall also assist in the commissioning and start up of the line.

9.2 QUALITY INCHARGE

CONTRACTOR shall provide a full-time QC who shall be responsible for the coordination of CONTRACTOR's construction quality surveillance, inspection, testing, and documentation activities.

10.0 CONSTRUCTION

All Construction Access, Construction Methods, Temporary Facilities and Work Areas shall conform to and be in compliance with COMPANY Operations, Standard Industry requirements and where applicable Royal Commission for Jubail Construction Safety requirements.

10.1 Turnaround Execution Plan

CONTRACTOR shall develop and submit to COMPANY a detailed project specific turnaround Execution Plan at least 60 days prior to the start of turnaround.

10.2 Security Program

CONTRACTOR is responsible for the security of its workers, tools, materials and equipment (and to and from) the jobsite. All small tools and construction equipment belonging to CONTRACTOR must be clearly identified as such. Tools including personal tools are subject to inspection at the security gate upon arrival and departure.

10.3 Construction Area Limits

COMPANY shall designate the boundary limits of access roads, parking areas, storage areas, and construction areas. CONTRACTOR shall not trespass in or on areas not so designated. CONTRACTOR shall be responsible for keeping all of its personnel out of areas not designated for CONTRACTOR's use. In the case of isolated work located within such areas, CONTRACTOR shall obtain permits to enter and perform the Work. CONTRACTOR shall keep all vehicles, equipment, materials and personnel in such areas as designated by COMPANY.

10.4 CONTRACTORS Office at Site of Work

During the execution of this Contract, COMPANY will provide office for project manager & coordinator in separate or shared office building

10.5 CONTRACTOR Supplied Temporary Buildings

Any CONTRACTOR supplied temporary construction buildings shall be fire retardant and shall include fire protection equipment. The location, size(s), quantity and type(s) of temporary buildings shall be subject to COMPANY's review and approval.

10.6 Personnel Identification

10.6.1 CONTRACTOR's personnel and Sub-contractor personnel shall have in their possession all required and properly validated licenses, certificates or identification badges prescribed by COMPANY or the Saudi Arabian Government.

10.6.2 CONTRACTOR shall wear and provide identification badges to all its employees working either directly or indirectly under its supervision. These badges must be worn conspicuously by these employees at all times when on the jobsite. CONTRACTOR shall provide Temporary badges and safety gear for visitors and delivery personnel.

10.7 Smoking

Smoking shall only be allowed in the designated smoking areas.

10.8 Dust Control

CONTRACTOR, for the duration of the Contract, shall maintain all excavations, embankments, haul roads, plant sites, waste disposal areas, borrow areas, and all other work areas free from dust, as determined by COMPANY. Industry-accepted methods of dust control suitable for the area involved, such as sprinkling, chemical treatment, tight bituminous treatment or similar methods, with COMPANY approvals, will be permitted. No separate payment will be made for dust control.

10.9 Water Pollution

CONTRACTOR shall, at own expense, provide suitable facilities to prevent the introduction of any substances or materials into any stream, lake or other body of water which may pollute the water or constitute substances or materials deleterious to fish, wildlife and domestic stock.

10.10 Air Pollution

CONTRACTOR shall also perform the Work so as not to discharge into the atmosphere from any source whatever smoke, dust, or other air contaminants in violation of the laws, rules and regulations of the government entities having jurisdiction.

10.11 Fuels & Lubricant

CONTRACTOR shall be responsible for the proper handling, transportation, storage and use of fuels and lubricants and shall, at CONTRACTOR’s sole expense, make good any damage caused by its handling, transporting, storage and use of fuels and lubricants.

10.12 Ventilating

10.12.1 CONTRACTOR shall prevent hazardous accumulations of dust, fumes, mists, vapors or gases in areas occupied during construction.

10.12.2 CONTRACTOR shall provide local ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.

10.12.3 CONTRACTOR shall dispose of materials in manner that will not result in harmful exposure to persons or disrupt or otherwise effect operation of existing facilities.

10.12.4 CONTRACTOR shall ventilate storage spaces containing hazardous, volatile or high temperature sensitive materials.

10.13 Site Signs

Identification signboards and notices for safety or instruction are permitted on site only after approval of COMPANY for format, location and quantity.

10.14 Drainage

CONTRACTOR shall provide proper and adequate drainage for its construction, storage, parking and fabrication areas including the necessary piping for disposal to COMPANY ditches, or sewers. Temporary drainage facilities shall be removed upon completion of Work unless COMPANY directs to have the facilities left in place. CONTRACTOR shall be responsible for providing and operating any temporary pumps for keeping its area drained. CONTRACTOR shall furnish and place any necessary surfacing material to avoid loss of time due to muddy conditions.

10.15 Lunch and Toilet Facilities

Company shall provide necessary lunch and toilet facilities for CONTRACTOR personnel… CONTRACTOR shall provide meals to their manpower during breaks in lunch tent.

10.16 Construction Entrance

Access into COMPANY work site shall be through TA gate.

10.17 Review by COMPANY

Review and approval of CONTRACTOR’s rigging, scaffolding and other construction plans by COMPANY, shall not constitute or to be construed as an assumption of CONTRACTOR’s responsibility or liability for scaffolding or safety under the Contract or at law, and does not relieve CONTRACTOR from full compliance with its legal and contractual obligations.

10.18 Interference

It is understood that the COMPANY may itself perform Work at or near the CONTRACTOR’s Work site, or have such Work performed by others. CONTRACTOR agrees to cooperate fully

with COMPANY or any other CONTRACTOR performing such Work, and not to interfere with the performance of such Work.

10.19 Site Clean Up

CONTRACTOR shall maintain the site in a safe and orderly condition by daily removal and disposal of accumulated rubbish and waste material. Temporary equipment shall be removed immediately upon completion of the WORK requiring the equipment. Upon completion of the Work, CONTRACTOR shall clear the site of all remaining CONTRACTOR's temporary facilities, temporary equipment, debris, tools, and material used in the Work. Where CONTRACTOR, upon written notice from the COMPANY, fails to maintain the site in a safe and orderly condition, the COMPANY will have the site maintenance Work performed and deduct the cost from the CONTRACTOR invoice.

10.20 Heavy lifts

CONTRACTOR shall provide a **heavy lift plan for all lifts over TEN (10) tons**, for COMPANY's review and approval.

11.0 ENVIRONMENTAL REQUIREMENTS

11.1 General Requirements

CONTRACTOR shall plan, execute and complete all work such that there are zero environmental incidents and no detrimental environmental impacts to the local population, workers, air, water, soil, plants and animals.

11.2 Environmental Care and Response Plan

CONTRACTOR shall submit a Project Specific Environmental Care and Response Plan in compliance with the Saudi Arabian Government, and Saudi Chevron Petrochemical Environmental Standards. The Environmental Plan shall provide specific plans and procedures to address compliance with these Standards and shall be submitted for COMPANY review prior to commencement of the Work.

11.3 Environmental Care Practices

CONTRACTOR shall perform the Work in accordance with all environmental care practices, applicable local and national rules, regulations and codes taking all reasonable precautions to protect the facility, adjacent facilities, workers and the public. CONTRACTOR shall have materials and equipment on site to minimize, control and

mitigate incidences of uncontrolled releases of materials to the air, water or land.

11.4 Environmental Care Orientation Meeting

CONTRACTOR's in-Kingdom supervisory personnel, including supervisory personnel of CONTRACTOR subcontractors, shall attend an environmental care orientation meeting, prior to commencing the Work. This meeting shall last at least two (2) hours and shall be separate from any safety or security orientation.

COMPANY may, at its sole discretion, audit CONTRACTOR environmental care orientation meetings.

11.5 Accidents and spills

Accidents, spills, uncontrolled releases to air, water, and land or other environmental incidents and "near misses" shall be orally reported to COMPANY at the time of the incident. CONTRACTOR shall submit written reports, in a format developed with COMPANY, within twenty-four (24) hours after each incident. CONTRACTOR shall maintain a jobsite record of such environmental incidents and "near misses" which shall be submitted to COMPANY upon written request.

11.6 CONTRACTOR's Responsibility

CONTRACTOR shall be wholly responsible for construction means, methods, techniques, sequences or procedures for environmental precautions and programs in connection with the Work. COMPANY shall not, in any way, be responsible for CONTRACTOR's failure to employ such precautions.

END
EXHIBIT–I